

CLAIMS

The invention claimed is:

1. A method of managing medical images comprising:
receiving a plurality of medical images created by a plurality of
5 medical imaging devices each of which processes the medical images using
a unique image format; and
converting the medical images to a common image format,
suitable for display on a computer screen.
- 10 2. The method of claim 1, comprising storing the converted images
in an image database.
3. The method of claim 2, comprising posting the converted images
for access via a client computer, including generating browser compatible
15 pages.
4. The method of claim 3, wherein posting the images comprises
embedding image tags in the browser compatible pages, wherein the image
tags point to the converted images.
- 20 5. The method of claim 1, comprising posting the converted images
for access via standard Internet procedures on a client computer having
standard browser capability.
- 25 6. The method of claim 1, comprising displaying at least one of the
converted images on a client computer in response to a user request.

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8. The method of claim 1, wherein receiving the plurality of medical
5 images comprises transferring the images from a computer readable
medium.

10. The method of claim 1, comprising storing the images as pixel values according to a predetermined standard Internet compatible process.

12. The method of claim 11, comprising cropping the images.

13. A medical image database comprising:
a first medical image generated using a first imaging format;
and
a second medical image generated using a second imaging
format, wherein the second imaging format is different from the first
imaging format.

14. The database of claim 13, wherein the first and second medical images have been converted to a common browser compatible image format and are stored in the database in the common browser image format.

5 15. The database of claim 13, wherein: the first medical image is generated from a first scanner manufactured by a first manufacturer; and the second medical image is generated from a second scanner manufactured by a second manufacturer.

10 16. The database of claim 13, wherein:
the first medical image corresponds to a first modality; and
the second medical image corresponds to a second modality.

15 17. The database of claim 16, wherein the first and second modalities are selected from the group consisting of: magnetic resonance imaging; echocardiographic imaging; nuclear scintigraphic imaging; positron emission tomography; electrocardiographic data; and x-ray imaging.

20 18. A medical image database comprising images corresponding to a plurality of different modalities, wherein the database is organized in a hierarchical data structure, comprising:

a patient identifier parameter; and

25 an image modality identifier parameter associated with at least one of the plurality of modalities wherein the patient identifier parameter is at a higher level in the hierarchical data structure than the image modality identifier parameter.

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5 an image modality identifier parameter associated with each of
the plurality of modalities; and

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a plurality of images representing a plurality of different modality scans;

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a patient identifier parameter associated with each of the plurality of images.

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in response to a user request, pulling images from a scanner;

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27. A method of managing medical images comprising:
storing in a database medical images converted to a browser compatible format, wherein the images correspond to at least two different examination times;

in response to a user request, displaying at the client computer the images corresponding to at least one of the two different examination times.

29. The method of claim 28, wherein displaying the medical image to the second user comprises displaying the medical image on a second client computer, wherein the first and second client computers are connected via a distributed network.

31. The method of claim 30, comprising, in response to a request from a user at a client computer, notifying the user when one of the converted images is accessible for viewing.

32. The method of claim 31, wherein notifying the user comprises transmitting an electronic message to a location determined by the user.

33. A medical imaging management system for use in a client-
5 server environment, the system comprising:

a transfer engine for receiving image data in a plurality of image formats;

a conversion engine coupled to the transfer engine for converting the image data to a common browser compatible format; and

10 a post engine coupled to the conversion engine for generating browser compatible pages for displaying the images on a client computer.

34. The system of claim 33, wherein the post engine is adapted to generate html pages containing image tags pointing to the converted
15 images.

35. The system of claim 33, comprising an image database coupled to the post engine, wherein the image database comprises images from a plurality of modalities.
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36. A method of managing medical images comprising:
linking a first scanner for a first modality and a second scanner for a second modality to a transfer engine via a distributed network;

transferring medical images from the first and second scanners
25 to the transfer engine; and

converting the medical images to a common browser compatible format.

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37. A method of managing medical images comprising:
 transferring medical images from a first scanner for a first
 modality to an image database; and
 5 transferring medical images from a second scanner for a
 second modality to the image database.

38. The method of claim 37, wherein transferring the medical
 images comprises converting the medical images to a common browser
 10 compatible image format.

39. The method of claim 37, comprising displaying on a web page
 at a client computer a selection comprising images corresponding to the
 first modality and images corresponding to the second modality.
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40. The method of claim 37, comprising selecting an image from
 the image database in response to a user request and displaying the image
 to the user at a client computer.

20 41. A method of managing medical images comprising:
 converting a medical image data to Internet browser compatible
 format;
 determining a region of diagnostic interest of the medical
 image; and
 25 adjusting image quality of the medical image based upon the
 region of diagnostic interest.

Claims
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 and 53-55
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5 43. The method of claim 42, comprising scaling each movie frame
such that the brightest pixel is scaled to a maximum brightness level of a
standard Internet compatible format.

45. The method of claim 44, wherein the at least two scanners are manufactured by at least two manufacturers.

47. The method of claim 41, comprising posting the converted medical image data to a medical image database.

49. The method of claim 48, comprising displaying the one medical
25 image at a browser.

50. The method of claim 41, comprising:

and

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pulling a second image data having a second data format,

converting the first and second image data having the first and second formats to a browser compatible data format.

20 53. A method of managing medical images for storage in a data
base comprising:

determining a region of diagnostic interest of a medical image;

cropping the medical image to include the region of diagnostic interest and to reduce the data to be stored in the database; and

25 storing the cropped medical image in the database.

55. The method of claim 54, wherein the adjusting comprises scaling the image according to a standard Internet compatible format.

a patient identifier associated with each image;
a modality identifier associated with each image and positioned
after the patient identifier; and
15 a scan date identifier associated with each image positioned
after the patient identifier, whereby a user at a browser may select a desired
image by entering an Internet address associated with the desired image.

58. The data format of claim 56, comprising a website identifier positioned before the patient identifier.

25 59. A medical image management system comprising:
 a transfer engine for receiving medical image data from an
 image data source;

a post engine for posting the browser compatible image to a
5 database connected to receive converted image data.

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    a decoder engine for extracting image pixel data from image
10  data;

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an encoding engine for converting image pixel data to a browser
15 compatible format connected to receive image pixel data, whereby image
data may be converted to the browser compatible format without loss of
diagnostic data.

61. The system of claim 59, comprising a server connected for
20 retrieving images from a database of browser compatible images in response
to a user input.

62. The method of claim 1, comprising adjusting a movie frame rate based upon a priori knowledge.

5 64. The method of claim 42, comprising setting a movie frame rate
based on a diagnostic question.

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66. A method of managing medical images, comprising:
retrieving from a database a plurality of medical images;
displaying the plurality of medical images on a web page; and
allowing a user to rearrange the display of the plurality of
15 medical images on the web page.

67. The method of claim 66 wherein a CGI program is used to rearrange the display of the plurality of medical images on the web page.

20 68. The method of claim 66 comprising the step of displaying the
rearranged medical images on a new web page.

69. The method of claim 66 comprising the step of allowing a user to select a displayed image and designate a location on the web page at which the selected image is to be displayed when the display of the plurality of medical images is rearranged.

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